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EMPIRICAL EVIDENCE OF THE BENEFITS FROM APPLYING COMPETITION LAW AND POLICY PRINCIPLES TO ECONOMIC DEVELOPMENT IN ORDER TO ATTAIN GREATER EFFICIENCY IN INTERNATIONAL TRADE AND DEVELOPMENT

Revised report by the UNCTAD secretariat*

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* In this revised report, additions are shown in bold type, while deletions are indicated by asterisks.

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SUMMARY AND CONCLUSIONS

1. The benefits of competition may be assessed on the basis of data relating to the effects of collusion or concentration and, conversely, the effects of RBP controls or of deregulation upon productivity, prices, profit margins, the persistence of profits, the flexibility or adjustment speed of prices or profits, incentives for technological innovation, consumer and producer welfare, economic growth and competitiveness in international trade. *** Some of the effects of competition are not easily measurable, since there are shortages of data and much of the evidence is inconclusive, ambiguous or over-aggregated. There are also sometimes trade-offs to some extent between competition, static efficiency, and dynamic efficiency. But the data available still broadly confirm the benefits of competition.** There is also a shortage of data as to the effects of RBP control and competition advocacy efforts. ***** But there is still evidence that the application of RBP controls has had an impact, both in individual cases and by having a deterrent effect, helping to create a climate favourable for competition. To maintain such a climate, however, continuing efforts have to be made to enhance the effectiveness of enforcement. Also, deregulation has been more effective when backed up by RBP controls.

2. The evidence available is mainly about the experiences of developed countries, but it still indicates that there would be substantial benefits to be obtained from strengthening the application of competition law and policy principles in developing and least developed countries and countries in transition in terms of greater production, allocative and dynamic efficiency, welfare and growth. Moreover, since the benefits of competition have been estimated mainly for countries which already have relatively open economies and competition policies, it is likely that other countries might have relatively more to gain from adopting and enforcing competition policies; by the same token, however, they might have relatively more adjustment losses. The content and application of competition law and policy, and its relationship with industrial and trade policies, have varied among different countries at different times, as countries have sought with mixed success to promote the technological capacity and international competitiveness of their industries, compensate for the effects of market failures or ease structural adjustment. Infant industry policies have been successful in some instances, but there have also been many failures. In the long run, full competition has been essential for the competitiveness of firms and industries. There has now been widespread adoption of reforms promoting competition in developing countries and countries in transition. In recent years, there has been substantial convergence in the competition policies followed by different countries, although there remain substantial differences among them.

3. There are still many regulatory restrictions on competition in developing countries and countries in transition; moreover, private restraints have sometimes replaced, or may replace, governmental restraints. The issue now for these countries would be to determine the optimal path to follow in order to continue competition-promoting reforms. Appropriate policies to follow in this area might be worked out on a case-by-case basis in the light of the evolving circumstances of individual countries, taking into account the experiences of other countries and the market imperfections prevalent in developing countries and countries in transition, as well as their general

business environment. But it would be useful to establish some clear parameters relating to the objectives of competition laws and policies (particularly the relative weights to be assigned to efficiency, consumer welfare and other objectives), and the decision-making procedures to be followed. Competition authorities could make a key contribution in the formulation and implementation of economic policies by (a) expressing their views relating to policies or measures that restrict competition, and advising on how legitimate economic goals might be attained through less competition-restricting measures; and (b) combining effective enforcement against RBPs with an economically realistic approach to cooperation and concentration and a dynamic assessment of markets. In the context of developing countries, flexibility in applying competition law and policy may be particularly necessary in order not to impede efficiency, growth or development goals (as provided for in the Set of Principles and Rules), and coherence would need to be ensured between competition policy and other policies aimed at promoting development.

4. Difficulties have been experienced with the availability or collection of information for RBP control purposes in developing countries and countries in transition. Competition authorities would therefore need adequate powers and procedures relating to information collection and exchange, in collaboration as appropriate with other governmental authorities and (in cases with international aspects) with competition authorities overseas. Moreover, given the shortages of data relating to the effects of application of competition law and policy by competition authorities, it might also be useful to strengthen information exchange among competition authorities regarding experiences in this respect. This might promote convergence among competition policies and support national and international efforts to promote competition, efficiency and consumer welfare.

5. In the light of the above, possible action by States could include:

(a) Strengthened emphasis on the protection and promotion of competition as a key goal of economic policies of developing countries, least developed countries and countries in transition, while leaving room for its flexible application to take into account the specific characteristics of individual countries;

(b) Further efforts by competition authorities to gather data relating to the effects of RBP enforcement and competition advocacy;

(c) Consultations within UNCTAD on powers and procedures of competition authorities relating to collection and exchange of information relevant to RBP control;

(d) Continuing information exchanges within UNCTAD on:

(i) Sources and procedures utilized by competition authorities to gather and organize information, on both an episodic and a systematic basis, including in dealing with cases having international aspects;

(ii) In the light of the economic analysis applied in specific cases, the modalities of intervention utilized by competition authorities (RBP control and/or advocacy), the procedures followed, and any difficulties experienced;

(iii) Effects of the intervention upon consumer welfare or firm, industry or national economic performance.

INTRODUCTION

6. The Third United Nations Conference to Review All Aspects of the Set of Multilaterally Agreed Equitable Principles and Rules for the Control of Restrictive Business Practices requested the UNCTAD secretariat to prepare "a draft outline of a possible study on empirical evidence of the benefits (including benefits for consumers) to be gained by developing and least developed countries and countries in transition from applying competition law and policy principles to economic development in order to attain greater efficiency in international trade and development". 1/ A draft outline of the study 2/ was accordingly presented to the Expert Meeting on Competition Law and Policy (13-15 November 1996), which recommended that the UNCTAD secretariat be requested to prepare the study for consideration at the next meeting, on the basis of comments made at that meeting and the comments to be received by 31 January 1997. 3/ The agreed recommendations of the Expert Meeting were endorsed by the Commission on Investment, Technology and Related Financial Issues at its first session (18-22 November 1996 and 7 February 1997). 4/ The * study * prepared in line with these requests 5/ **was presented to the Expert Meeting on Competition Law and Policy (24-26 November 1997) which, in its agreed conclusions, requested the UNCTAD secretariat to prepare for consideration by the forthcoming meeting of the Intergovernmental Group of Experts on Competition Law and Policy a revised version of the study, taking into account comments made at the Expert Meeting and written information received by 31 January 1998. 6/ The revised study has accordingly been prepared in the light of oral and written comments received, 7/ and the opportunity has been taken to up-date the study with some newly obtained data.**

7. For the purposes of this study, the term "competition" refers to the process of rivalry among firms and to market structures conducive to such rivalry (or potential rivalry), while the term "competition policy" refers to policy aimed at preserving and promoting competition, both by enforcing competition law against restrictive business practices (RBPs) by firms and by influencing the design or implementation of other governmental policies or measures affecting competition. The present study reviews empirical evidence of the benefits of competition for efficiency, welfare, international competitiveness and growth. No attempt is made to examine the effectiveness of competition policy in attaining other goals which are vested in it in some countries or regions, such as market integration, promoting market opportunities for small and medium-sized enterprises (SMEs), ensuring freedom of economic action, the deconcentration of economic power or the promotion of a pluralistic economy and society.

8. Chapter I briefly describes the theory and provides empirical evidence for the benefits of competition in terms of static and dynamic efficiency and consumer welfare and some trade-offs which may arise. Much of the evidence reviewed relates to the effects of greater competition arising from deregulation and liberalization, since economic regulation is one main form of restraint on market entry. Chapter II reviews evidence relating to the broader effects of competition on welfare, growth and trade competitiveness, considering in this context some effects of direct governmental intervention and deregulation on welfare, economic growth and efficiency in international trade. Chapter III sets out evidence relating to the beneficial effects of RBP control and competition advocacy by competition authorities.

Chapter I

COMPETITION AND EFFICIENCY

A. Static efficiency

9. Competition allows markets to reward good performance and sanction poor performance by producers. It thus encourages entrepreneurial activity, market entry by new firms, and greater efficiency on the part of enterprises; this leads to greater productivity of capital and labour, reduces costs of production, and improves the competitiveness of enterprises (although some producers may lose out in the process of competition and may have to exit from the market). Competition also ensures that cost savings are passed on to consumers (competition leads to cheaper prices overall, although prices may sometimes increase in some markets as resources are reallocated to production in other markets); and consumers benefit as well from greater product quantity, quality and variety. For this purpose, consumers include business users of intermediate inputs, whose product quality and cost structure are improved by competition among their suppliers and Governments undertaking public procurement. In economic terms, the two main types of efficiency promoted by competition are "static efficiency" (optimum utilization of existing resources at least cost) and dynamic efficiency (optimal introduction of new products, more efficient production processes and superior organizational structures over time). Static efficiency may be subdivided into "production efficiency", i.e. technical and non-technical operating efficiencies, together with transaction cost and X-efficiency 8/ savings; and "allocative efficiency", i.e. the allocation of products through the price system in the optimum manner required to satisfy consumer demand (which will occur where the output of each product is at the level where the marginal cost of producing extra units equals their price). Misallocation of resources leads to a "deadweight loss" not recovered by either producers or consumers. Perfect competition may sometimes lead to inefficiency, and some market power is inevitably present in many situations; competition policies therefore aim at achieving as much "workable competition" as is realistic and seek ways in which market power can be made compatible with active competitive behaviour. But the difficulty in practice is to identify what is workable, i.e. how much competition is necessary for its beneficial effects to occur, whether actual or potential market entry or technological change would prevail over entry barriers and erode market power, and whether any countervailing efficiency gains are likely to arise.

10. Some of the effects of competition are not easily measurable, or there may be little available empirical evidence thereon, while some evidence may be inconclusive or ambiguous; or it may be difficult to isolate the effects of more competition from other savings arising from deregulation. Despite these difficulties, there is evidence relating to the beneficial effects of competition upon static efficiency, and some difficulties and trade-offs which may be involved in this respect. Limitations of the studies providing data relating to the effects of concentration are that they do not examine true "markets" in the competition policy sense (taking into account product substitutability **or the size of geographic markets**), 9/ and often do not fully reflect competition from imports or the effects of collusion, of the way market structures change as firms compete, or of potential market entry;

rather, they take concentration (usually "seller concentration" of the producers in a country) within aggregate industry classifications *, usually at the 3- or 4-digit level) during given periods of time as proxies for true market power. Yet, as discussed below, market concentration does not necessarily equate with lack of competition, particularly if barriers to entry are low; competition is a process which is not necessarily related to the number of competitors; and any efficiency gains obtained from concentration may be pro-competitive where they result in stronger competition. **There are also statistical problems in respect of some of the data cited, arising from such factors as: over-aggregation of industries, products, market shares, prices, or profits; the difficulties of interpreting the statistical significance or economic importance of explanatory variables in economic models; or the difficulties of distinguishing between the effects of differences in efficiency and of restraints upon competition, or of price-raising and cost-reducing linkages.** However, the data available * are still useful * **in terms of** providing a broad picture. Little attempt is made below to discuss inefficiency arising from activities associated with market power (such as rent-seeking activity in order to obtain or maintain regulatory protection, or non-price competition through excessive advertising, product differentiation or service quality), since it is difficult to quantify losses incurred * **thereby**, and since non-price competition is often beneficial for consumer welfare.

11. In the Netherlands, it has been calculated that the average annual consumer loss arising from collusive practices or restrictive regulations in several service sectors amounts to 4,330-5,430 million guilders (around $2.1-2.7 billion). 10/ Data relating to the United States show that a bid-rigging conspiracy for the sale of frozen seafood which was eventually prosecuted had an average mark-up over the competitive price over a one-year period of 23 per cent, 11/ and the breakdown of price-fixing conspiracies in some industries has led to steep declines in manufacturing costs. 12/ **An examination of the effects of a sample of 30 auctions affected by a cartel among bidders in auction markets for real estate in Washington D.C. found that the real estate sellers had received prices which were 32 per cent lower overall than the prices which the cartel members later agreed upon in "knockout auctions" among themselves.** 13/ It is true that cartels * **are** sometimes **used in some countries or regions** to facilitate adjustment, but vigorous competition may sometimes be as or more effective in forcing rationalization of industries, particularly in larger markets. 14/ An examination of some exempted rationalization cartels in Germany (several different types of cartels are allowed under the German competition law, subject to certain conditions) found that they had promoted the viability of the producers in the industries concerned, but there was little evidence that they had contributed to productivity and efficiency improvements, while they had resulted in higher prices and less output. 15/

12. The evidence relating to the relationship between concentration, on the one hand, and productivity, prices or profits, on the other, is mixed **or often inconclusive, as indicated above** (* this may **partly** be because lack of competition * **encourages** dissipation of profits in higher costs). A study of 670 British companies found that market power (estimated by high market shares) led to reduced levels of productivity, and that more competition (as measured by increased numbers of competitors or lower profit margins) was

associated with higher rates of total factor productivity growth. 16/ * In the case of the United States, there is little clear evidence of a relationship between market structure and prices, and insofar as there is, it is not clear to what extent this reflects superior competitive performance or better products by leading firms. But there is still unequivocal evidence relating to higher costs or charges of services such as electrical utilities or banks operating in concentrated markets; 17/ some mergers (particularly in highly concentrated markets) have raised prices substantially; and there is also some evidence that concentrated markets have fostered collusion. 18/

13. Where market concentration decreases competition, it may sometimes still lead to greater efficiency by allowing economies of scale or scope in production, organization or other activities, the benefits of which may be passed on to the consumer to some extent. 19/ The extreme case of this is the natural monopoly, where the economies of scale and scope involved and the size of sunk costs make production by one firm the most efficient solution. However, the minimum * **efficient** scale of operations varies greatly among different industries **and, being determined by technology and the prices of inputs, is subject to change over time.** The effects of seller concentration among domestic producers depend inter alia on the size of the market in relation to the minimum economic scale of plant, as well as on competition from imports. Studies of Canadian and Swedish industries have found that trade barriers lead to inefficiency or higher profits, but high seller concentration does not do so as long as import competition is vigorous and may have led to economies of scale. In the larger United States market, import competition has had a relatively stronger effect on efficiency in those industries that were more concentrated than they needed to be to achieve economies of scale. 20/ Much therefore depends on the degree of concentration; a study of industries in six developed countries confirms that an increase in seller concentration above a certain level tends to reduce technical efficiency. 21/ As regards mergers,* **several empirical studies indicate that the majority of them (particularly conglomerate mergers) decrease efficiency and profitability, while having insignificant positive effects, or negative effects, upon growth; other studies are inconclusive or provide evidence of improvements in market share or investment, particularly in the case of horizontal mergers. 22/ Thus, the effects of concentration or of mergers may vary, underlining the need for a case-by-case analysis in the light of evolving industry and market conditions.**

14. The ratio between prices and marginal costs (mark-up ratio **or Lerner index) * may provide a first impression of the degree to which there is insufficient competition within a market (in practice, given the difficulties of measuring this ratio, different profitability measures such as price-cost margins are used as proxies, with varying degrees of reliability). But while a positive correlation between numbers of sellers and price-cost margins may tend to indicate collusive behaviour, there is little firm evidence of causative linkages between concentration, lack of competition and profitability. Moreover, temporary high profits would not indicate much in themselves; it is rather** the persistence over time of relatively high profit levels in a product or geographical market, or of inter-firm differences in profits among firms in the same market, which may indicate that competition in that market is hampered: perfect allocative efficiency would lead to equalization of profit levels throughout the economy in the long run, as

capital flows from lower-return to higher-return uses. * **Comparisons** of several developed countries * **have** found that, for most countries, the more competition there was in their markets (mainly assessed from levels of concentration), the higher the convergence in long-run profits and speed of profit adjustment. 23/ **A survey of different sectors in OECD countries for the period 1970-1992 found that, on average, the size of mark-ups correlated with the size of firms, the extent of product differentiation, and the R and D intensity prevalent in different industries, but did not correlate with seller concentration; mark-ups were relatively higher where market entry was relatively low, and in most service sectors (probably because there was less competition than in manufacturing), but some of these differences may have been due to innovation rents, and there were substantial variations across countries, perhaps because of differences in the height of entry barriers. 24/ But mark-ups and the persistence of profits usually vary over the business cycle, may be higher in dynamic markets, and may be due to individual firms' continuous lead in efficiency; measurement of persistence in profits is also difficult because of the inaccuracies of aggregation over different products and firms. For these reasons, little reference is made to these two indicators for purposes of case-by-case enforcement under most competition laws.** The adjustment speed of prices to changes in costs and demand is another key measure of economic flexibility, the balance of the evidence relating to several OECD countries (with a few exceptions) being that adjustment speed is slower in industries with higher seller concentration; competition from imports has had a positive effect on adjustment speed in some countries and an insignificant effect in others. 25/ A survey of price-setting behaviour in 654 United Kingdom companies found that competition (as measured by numbers of competitors or market shares) increased the frequency of price reviews. 26/ The extent of price responses to a downturn in demand and thus in capacity utilization is another indicator; such "product market inertia" in response to downturns in the business cycle has been found to be greater in European and Japanese markets (for 1974-1992) than in the more competitive United States market. 27/ Furthermore, there is some evidence that cyclical pricing responses are more sluggish under oligopoly than in more atomistic markets (although such aggregate analyses do not allow for relatively dynamic markets), while the tendency towards excess capacity has been found to be particularly strong in weak oligopolies and loose cartels. 28/

15. Industry structures in developing countries tend to be more concentrated than those in developed countries. 29/ A comparison of the interaction between the four-firm concentration ratio of 14 Malaysian manufacturing industries, their growth rates and nominal tariff rates for imports of the goods produced by these industries found that there was a lower average rate of nominal tariffs in highly concentrated sectors, yet import flows were relatively low in these sectors compared with less concentrated sectors. 30/ This may possibly be because large firms in these concentrated industries had exploited their dominant positions to raise entry barriers. Small firms operating in industries which were relatively more protected from imports had relatively low growth rates; this may have been due to extensive market entry into these sectors because of protection, which may have led to inefficiently small-scale production. An investigation of 1,492 establishments in 31 Malaysian industries found that price-cost-margins increased with seller concentration, advertising intensity, export

opportunities, competition from imports and capital intensity. 31/ This latter study also reviews other studies of the relationships between structure, conduct and performance in several (mainly developing) countries. 32/ In general, they confirm that in these countries (as in Malaysia), price-cost margins, firm size, economies of scale, capital intensity and presence of foreign investors are positively correlated with concentration. **Data relating to the Republic of Korea also show similar trends.** 33/ However, it is not clear to what extent this is due to lack of competition or to the relative efficiency of large firms in these sectors, as well as to economies of scale in small markets.

B. Dynamic efficiency

16. Dynamic efficiency is probably the most important beneficial effect of competition. However, the possible trade-offs it may involve with competition are greater than in the case of static efficiency,* **and policies aimed at encouraging dynamic efficiency accordingly require more sophistication and concern for incentives to invest than do policies solely concerned with promoting static efficiency**. Competition provides incentives to undertake research and development (R & D) and to introduce new production **and distribution** methods, * products **and services, as well as to create or enter new markets,** in order to stay ahead of competitors. Moreover, if there are many paths which technological advance can take, competition allows many of them to be tried and then selects the best, something a monopoly would find hard to replicate. In the unanimous opinion of business representatives at a recent hearing of the United States Federal Trade Commission, competition stimulates innovation; thus, it was accepted even by the Chairman of AT&T, the former telecommunications services monopolist in the United States, that the anti-trust decree requiring its divestiture of the assets used for its local telephone exchanges, linked with an order to the newly formed local companies to provide non-discriminatory interconnection rights to AT&T's long-distance rivals, not only encouraged extensive market entry, growth and price decreases, but also led to massive technological innovation. 34/ Data relating to the telecommunications industry in other OECD countries confirm that liberalization has led to technological innovation. 35/ It may also be noted that, in many circumstances, small firms are more innovative than large ones, particularly in making radical innovations in industries where technological progress is rapid, and their research expenditure brings relatively more innovations per unit of expenditure incurred. Keeping markets open to new entrants with novel ideas is an important condition for technological progress. 36/

17. However, in some circumstances, competition may discourage innovation. Where profits are likely to be reinvested in innovation efforts, there may be a trade-off between static and dynamic efficiency, and between short-term and long-term consumer welfare. Profits over and above marginal costs may be needed both to finance ongoing R & D and as an incentive for further R & D (relatively high mark-ups have been found in some innovative industries). 37/ * **In some R & D-intensive industries, high concentration may be inevitable because of indivisibilities of R & D and high fixed costs;** R & D intensity tends to increase with firm size, and concentrated industries have a higher R & D/turnover ratio and propensity to patent. 38/ * Large companies may **also** carry their new technologies to a higher degree of perfection than small

firms, and excel at cost-reducing R & D. However, **innovative output tends to rise less than proportionately with firm size and, on the whole, there is little empirical evidence that large firm size or higher concentration is generally associated with innovative activity. Even where a positive association exists, this does not necessarily mean there is a causal relationship; market structure and firm size are themselves influenced by innovative activity, and** inter-industry differences in technological opportunity explain much better R & D or innovation intensities than do differences in market structure. 39/ **The advantages of large firms or firms with market power may also be offset to some extent by inter-firm cooperation.** R & D collaboration and joint exploitation of research results often lead to substantial efficiency gains, but can also reduce inter-firm rivalry, deter new entry and have anti-competitive spillover effects on production and marketing and in downstream markets, with adverse consequences for the pace and direction of technological change. 40/ The technological outcomes of cooperative R & D arrangements initiated in Europe during the 1980s have proved disappointing so far. 41/

18. Because of the need to allow innovators the chance to recover their R & D investments, and minimize the risk that "free-riders" will appropriate the results of such R & D, intellectual property rights (IPRs) provide a degree of protection from competition for a given period (i.e. competition on the basis of price and quantity is deliberately restrained in order to encourage competition through innovation). 42/ While this may lead to a deadweight loss through higher prices, reduction in diffusion of the innovation and its fruits, and stifling of follow-on innovation (if protection is too broad), it should be set off against the growth and welfare benefits accruing from the introduction of new products and processes. Moreover, the exclusivity provided by IPRs does not necessarily amount to a monopoly, since there may be sufficient competition from substitute products or technologies.

Chapter II

COMPETITION AND GROWTH

A. Competition, deregulation and welfare

19. Barriers to competition within an economy, whether due to governmental or private restraints, lead to welfare losses. Thus, a survey of 46 countries found a significantly negative relationship between the level of per capita income and the size of average mark-up ratios in 1985. 43/ The proportion of deadweight loss to gross domestic product for the United States, calculated as a function of the relative price distortion (profit margin) and demand elasticity (variability of demand in relation to price changes) in different sectors, has been estimated at between 0.5 and 2 per cent. 44/ For the Netherlands, it has been estimated, on the basis of an applied general equilibrium model for a small open economy, that the real annual growth rate between 1984 and 1990 might have been about half a per cent higher, and export growth almost one per cent higher, if Dutch markets had been characterized by the same flexibility as in the United States; and the macroeconomic impact of tax reductions would also have been amplified. 45/

20. Deregulation, privatization and the introduction of greater competition in a number of sectors in OECD countries has, in general, led to market entry, reductions in costs, prices and profits, improved service quality, and innovation. 46/ It has been estimated that deregulation in seven major United States service industries during the 1980s led to reduced production costs, improved productivity and innovation, market entry opportunities, downward pressures on prices, greater product variety and better quality of service, as well as an annual increase of $32-42 billion in consumer welfare and $3.2 in producers' profits, amounting to a 7-9 per cent improvement in that part of GNP affected by the reforms. 47/ A comparative review of European countries found that there was a positive correlation between relatively less regulation of product markets, productivity growth and overall economic growth. 48/ The implementation up to 1994 of the Single Market programme in the European Union (involving removal of barriers to trade within the EU) is estimated to have increased income by 1.1-1.5 per cent over the period 1987-1993, created 30,000-90,000 jobs and decreased inflation by 1-1.5 per cent (compared with what it would have been otherwise). Around half of this came from increases in competition and efficiency improvements, and there were reductions in the rate of increase in firms' profit margins as compared with the rate of increase during a previous period, price reductions in some sectors, and reductions in concentration at the national level, coupled with increases in concentration at the Union level in line with increases in pan-European activity. 49/ In Australia, it was estimated that the benefits to be expected from a package of competition-promoting and deregulatory reforms (including extension and revision of RBP control rules, systematic review of regulatory restrictions on competition, extension of prices oversight to public enterprises, and enhanced competition and efficiency in the provision of infrastructure) would, in the long run, lead to an annual gain in real GDP of 5.5 per cent, or $23 billion; consumers would gain by almost $9 billion; and there would be increases in real wages, employment, profits in most industries and governmental revenue. 50/ **In Poland, the implementation of competition policy within the overall framework**

of policies to promote structural change, sectoral restructuring, privatization and demonopolization has encouraged the creation of a large number of SMEs, and greatly improved efficiency in many sectors (such as in the trade, services and consumer goods sectors). 51/

21. It is likely that the above estimates understate the benefits of reform, as qualitative assessments in terms of better service quality or pressures to innovate are not taken into account, since not all sectors or areas where deregulation would be beneficial are included, and since the resources freed from enhanced competition in one sector would be reallocated for use in other sectors, thus improving the overall flexibility of the system and the capacity to innovate. Moreover, since these benefits have been estimated for countries which already have relatively open economies and competition policies in place, one may reasonably expect that countries without such policies might have relatively more to gain from deregulating and applying a competition policy. Thus, an evaluation of the effects of regulatory reform programmes on GDP in some major developed countries, taking into account increases in productivity and innovation, estimated that such effects would, reflecting the scope left for regulatory reforms in different countries, vary from less than 1 per cent (for the United States) to 6 per cent (for Japan). 52/ Some indications of the economy-wide gains for developing countries from deregulation are provided by data indicating that deregulation of entry into the long-distance telecommunications market in Chile led to 50 per cent cuts in rates, with large reductions in waiting times for telephone connections (as in other Latin American countries); the opening of port terminals to competition in Buenos Aires led to an 80 per cent reduction in fees; the opening of stevedoring operations to competition in Montevideo increased productivity by 300 per cent; and the welfare cost of selected regulations and other governmental interventions in the 1980s in Argentina is estimated to have been around $4 billion a year (1990 dollars). 53/

22. On the other hand, the findings of the studies discussed above often do not take into account all adjustment losses, which one may also reasonably suppose to be higher in countries with more regulated economies. Moreover, liberalization and the elimination of distortions within an economy do not automatically lead to growth in the absence of the supply capabilities to take advantage of new opportunities, and the prevalence of competition is only one factor determining countries' growth rates. Despite the fact, as indicated above, that the economies of Japan and Europe are relatively more regulated and protected than the economy of the United States, they grew faster for decades after the Second World War. Some implications of this are examined in the following section. Also, it should be noted that some of the above studies consider not only economic deregulation of measures directly restricting market entry or exit, pricing or output, which is of direct relevance to the present study, but also social regulation protecting the consumer, health, safety or the environment, and process regulation involving paperwork and administrative costs. In practice, however, it may sometimes be difficult to draw the line among these different types of regulation, and the issue of whether a social regulation places an undue restraint on competition has been a matter of controversy in the field of international trade.

B. Competition and industrial policy

23. Empirical evidence relating to the effects of industrial policy on competition and efficiency is mixed. Industrial policy measures implemented in different sectors by Japan, the Republic of Korea and Taiwan Province of China included control of market entry or capacity expansion; State-initiated or tolerated mergers, inter-firm cooperation, cartels, coordinated capacity scrapping and market-sharing arrangements; flexible trade protection for infant industry development; channelling of investment into priority sectors and activities; and subsidies and incentives linked to the acquisition of technology and export performance. 54/ In the Republic of Korea, the Government promoted the development of large conglomerates as a means of achieving large economies of scale in mature heavy industries. However, such high concentration eventually led to losses in terms of efficiency, including through lack of flexibility, the stifling of the growth of supplier networks and over-concentration of innovation efforts. 55/ Many of these governmental interventions in some East Asian countries may have helped to compensate for the effects of market failures created or exacerbated in developing countries by shortages of entrepreneurship, capital or technology, or poor information flows and physical and institutional infrastructure. Such interventions were not aimed at "picking winners" at the frontier of international best technological practice, but rather at the mobilization of investment, the acquisition of mastery over readily available technologies and competitiveness in mature product markets. Some factors contributing to success were selectivity in protection and incentives (necessary to ensure efficient resource allocation between technologies involving substantial learning costs and simpler activities), conditionality related to technological mastery and export performance, the institutional and administrative capacity to implement such policies and maintain some insulation from rent-seeking pressures, and inter-firm rivalry. 56/ A key role in industrial success was played by strong competition among Japanese firms and among firms from Taiwan Province of China on domestic and international markets; the most successful Japanese industries have been those where domestic rivalry was strong (which was stimulated by high growth rates and market entry). 57/ Although price competition among large conglomerates from the Republic of Korea was generally limited to international markets, firms competed vigorously to win temporary monopolistic positions or subsidies. And firms from all three areas naturally had to face strong competition from foreign firms on international markets. This interaction of government policy and inter-firm rivalry stimulated the growth of technological capabilities and exports. But there have been several failures in governmental intervention in Japan and the Republic of Korea. 58/ There has been extensive phased deregulation and stronger competition law enforcement in these countries and in Taiwan Province of China. A comparison of prices and profitability in the regulated and protected cattle-feed industry with those in the electronics industry (for which trade protection had been liberalized) in the Republic of Korea showed that the former's profitability and divergence from international prices were much higher than the latter's, even though the electronics industry was highly concentrated. 59/ Trade protection and business licensing controls have also been successfully used by developing countries such as Brazil and India to build up some industries, 60/ but there have been numerous policy failures as well, and infant industry protection has often led to the creation of permanent infants.

24. In developing countries, it is likely that import competition can boost the structural efficiency of industry by giving domestic firms greater access to inputs unavailable or more costly in domestic markets (although gains from these may, at least in the short term, be offset by income losses from the shrinking of domestic industry). Also, available data would indicate that exposure to foreign competition has tended to impose pricing discipline and improve technical efficiency; however, there has been no consistent correlation between trade liberalization and productivity increases. 61/ Thus, in Chile, extensive and sudden import liberalization between 1967 and 1979 led to a decrease in the mean price-cost margin from 48 to 32 per cent and an increase in the four-firm concentration ratio from 49 to 61.5 per cent as many domestic producers went bankrupt, merged or switched product lines. 62/ But there were no changes in sectoral productivity levels, and market entry rates fell. 63/ In many cases, price decreases were not substantial because competition among foreign suppliers was based on product differentiation rather than on price, and because many local firms merged or controlled distribution channels. National production began to be exposed to wide fluctuations in international prices for some products and to dumping. More pragmatic and selective policies adopted in the mid-1980s (including increased trade protection followed by liberalization in 1991) proved more fruitful. The eventual application of strict prohibitions on vertical restraints resulted in a flexible and independent distribution sector, which contributed to the success of trade liberalization. 64/ In Colombia for the period 1977-1985, gradual trade liberalization led to higher and steadier growth than in Chile, a lowering of price-cost margins and increased efficiency, with efficiency growth being largest in highly concentrated industries. 65/ But in many product areas such as fertilizers, pharmaceuticals and plate glass, domestic and international price differentials persisted because of manufacturing and marketing linkages between domestic and foreign firms. On the other hand, a leading United States biscuit manufacturer allegedly found it difficult to enter the market because of exclusive distribution clauses between a dominant domestic manufacturer and major retailers, and had to enter into licensing and joint marketing arrangements with the dominant firm. 66/ **In some countries, competition from foreign investors has spurred the adoption of international best practice by local firms, such as in the retailing sector in the Philippines and the Republic of Korea; however, incentives, exclusive rights or trade protection granted to investors in some countries, as in the Czech Republic, Kenya or Sri Lanka, may have distorted competition in domestic and/or foreign markets. 67/**

25. In the long run, full confrontation with competition has been essential to ensuring the continuing development of industries. A study of the evolution of over 100 industries in 10 countries, including Japan and the Republic of Korea, found that at all stages of development there was a strong correlation between vigorous rivalry within industries, and the creation and persistence of competitive advantage in domestic and export markets; creating a dominant "national champion" had rarely resulted in international competitive advantage, as firms that did not have to compete at home rarely succeeded abroad. 68/ This was the case even in industries with substantial economies of scale based in countries with small domestic markets, as this pressured local firms to expand on world markets. Competition among domestic firms was often found to have a relatively more beneficial effect than foreign

competition, because of rivalry with known competitors, and because of the need to innovate to do better than other firms working under similar conditions; however, an open home market together with global strategies could partially substitute for the lack of domestic rivals in a smaller country. The key role that competition can play in increasing efficiency and consumer welfare, and thus in supporting development efforts, has been better appreciated by developing countries and countries in transition in recent years. This shift in perception has contributed to widespread deregulation, price liberalization, demonopolization, privatization, removal of subsidies, liberalization of trade and foreign direct investment policies, and, in many cases, the adoption or reform of competition laws and policies.

26. Governments in advanced countries have also directly or indirectly intervened to protect and promote high-technology industries, and this may actually have benefited competition in certain cases. It has been suggested, for example, that (direct or indirect) government subsidies * have increased competition and accelerated innovation in the commercial aircraft industry, avoiding the natural monopoly outcome which would have occurred if market forces alone had prevailed. 69/ In general, however, Government intervention in advanced countries has met with more failures than successes; it has been suggested, for example, that the failure of European efforts to promote electronics or telecommunications industries illustrates the high risk of failure of industrial policies when they underestimate the value of competition and give too much market power to a few sheltered domestic producers. 70/ Also, it may have become increasingly inefficient for these Governments to intervene directly as industries became more complex and knowledge-intensive and the path of future technological development more uncertain, and the flexibility brought about by competition and decentralization of investment decisions would then have secured a decisive advantage in discovering where resources would best be allocated. 71/ The industrial policies now followed by the European Union are less interventionist, and competition policy is considered to be complementary to industrial policy. A permissive approach has been adopted to joint ventures permitting the development of high technology or the transfer of new technology to the EU from non-EU firms. 72/ Conversely, in dealing with declining industries, the European Commission aims to enable structural overcapacity to be eliminated, but any agreements relating to structural adjustment must not include provisions fixing prices or quotas and must contain provisions for plant closures and prohibition of new capacity. 73/ In the United States, competition law and policy have also varied significantly over the last two decades, including through liberalization of the treatment of R & D joint ventures and even production joint ventures. Thus, a production joint venture between the world's two largest car manufacturers was allowed to go ahead by the Federal Trade Commission because of the transfer of improved manufacturing and management techniques to the American partner, although limits were placed on its output and duration and on the exchange of confidential business information in order to prevent anti-competitive "spillovers"; the venture was eventually terminated with the consent of the parties. 74/ In recent years, there has been convergence in the competition policies followed by the European Union and the United States, as well as by other countries or regions, but there are still substantial differences in this area.

Chapter III

THE BENEFITS OF APPLYING COMPETITION LAW AND POLICY

A. The effects of RBP control and the need for information

27. It is likely that RBP control has substantial beneficial effects on competition, in terms not only of direct effects in cases dealt with, but also of the general deterrent effect on engaging in RBPs; this would oblige firms to compete harder, and thus create a competition climate and business culture. However, there is a paucity of ex post facto studies quantifying the effects of enforcement. Surveys in the United States have found that price cuts tend to occur at the outset of an investigation, before the actual bringing of a case. Even where firms investigated for price-fixing are not charged, there may be price reductions, and trend-adjusted prices may remain lower than their pre-investigation levels for a considerable time after the termination of a price-fixing case. Thus, a survey of 23 * products involved in nationwide price-fixing investigations * in respect of which no court action was eventually initiated, found that 14 of * the products experienced price reductions, with an average reduction * over all 23 of 1.4 per cent; this survey was undertaken on the basis of a comparison of the nationwide mean producer price indexes for the industries in question (deflated by the all-industrials index) a year before and a year after the start of the investigations. 75/ * A time-series analysis (undertaken on the basis of the mean producer price indexes for the industries concerned over the period 1960-1980, deflated by the all-industrials index) of five price-fixing cases sucessfully pursued by the Justice Department from 1965 to 1974, involving nationwide manufacturing conspiracies or a series of regional conspiracies, found that for two of them, the start of investigation led to price reductions of 2 and 5 per cent respectively. With regard to three of these cases, real prices at the end of the litigation were 6.6-11.4 per cent lower than would have been predicted in the absence of anti-trust action. Five years after the termination of these cases, a deterrent effect of 3.4-8.9 per cent remained, but the deterrent effect of the one case involving no criminal sanctions had eroded over time. 76/ In a recent case involving a proposed merger of two office supplies superstores, the Federal Trade Commission successfully obtained a preliminary injunction against a merger on the basis inter alia of data showing that, in geographic markets where the acquiring company did not face competition, its prices for 90 per cent of the goods it sold were an average of 13 per cent higher than in geographic markets where it competed with two other firms (including the company to be acquired); similar evidence relating to 500 items sold by the target company found the price differential to be well over 5 per cent higher. 77/ Confirmatory evidence (albeit less strong than that indicated above) of this general pricing trend was obtained from similar evidence relating to prices charged during earlier periods, and from the testimony of non-superstore competitors.

28. Simlar responses to competition cases were found in a time-series study of producer price indexes for 10 products from the mid-1950s to the mid-1980s involved in cases where the European Commission and/or the German Federal Cartel Office (FCO) had found that RBPs had occurred (the cases involved German firms and/or affected the German market); in a cross-section study of 1979 data for 106 German industries; and in an analysis of changes in

profit margins over time for 17 German companies involved in cartel cases. 78/ A case brought by the FCO would lead to price decreases of 3.7-5.2 per cent in the year of the decision, but this effect would be totally eroded by the following year; however, particularly in concentrated markets, there would be a decrease in profit margins (an average of 28.4 per cent in 13 out of 17 cases). A case brought by the European Commission would lower German prices by 2.6-4 per cent in the year of the decision, but less than 10 per cent of the initial impact would remain after five years. The average overall effect of the introduction and enforcement of European and German competition law on German industry amounted to less than 1 per cent of manufacturing prices, and no long-lasting deterrent effect was found. There was evidence, however, of a "regime effect" occurring in Germany after the introduction of the competition law in 1957, i.e. a general price decline in West German industry due to changes in the competitive environment. This suggested that further changes in the law or penalties would affect competitive behaviour.

29. A 1985 survey of Brussels-based lawyers specializing in competition cases found that most thought the European Commission failed to detect most price-fixing engaged in by firms, but the probability of an investigation and the amount of fines imposed by the Commission had increased over the previous 10 years, and were regarded as having a considerable deterrent value. 79/ Some deterrent value was also attached to the administrative costs and media attention associated with undergoing investigation and litigation. Among enforcement changes that were being considered by the Commission at that time (and were subsequently adopted), the lawyers considered that an increase in fines, an increase in the number of enforcement personnel, and the issuance of more guidelines would be helpful in promoting corporate compliance with the law. But the two changes expected by the lawyers to be the most effective were the encouragement of private damage suits and the imposition of penalties on the individuals involved (and not just their firms). In the case of the United Kingdom, research into the effects of investigation by the Monopolies and Mergers Commission (MMC) between 1959 and 1973 of 28 product markets under the complex monopoly provisions of the United Kingdom's competition law (analogous to market domination) found that results were relatively modest. After being investigated, the initial dominant firm or oligopoly maintained or improved its position in around a third of these markets; in a quarter of them, the market leader's sample declined by at least five percentage points, but the loss was wholly or partly compensated by the increased market shares of existing oligopolists; and in the remaining 12 markets, new entrants gained substantial market shares, but market structure remained oligopolistic. 80/ Moreover, there was no significant difference with the rates of market share decline of leading firms in a control group; on the other hand, the fact that leading firms in those markets which the MMC had found to lack competition were no more successful in preserving their dominant positions than leading firms in other markets would indicate that the MMC's intervention may have successfully facilitated competition. * **In Pakistan, the benefits of competition policy have yet to emerge visibly, because enforcement has been hampered by lack of resources, reliable data, or sufficient information about production costs, market shares and consumer behaviour. 81/ However, liberalization, privatization and deregulation policies are contributing to the expansion of the private sector, and the competition authority is expected to play an important role in monitoring and regulating market forces in the**

changing economic environment. The above evidence would suggest that continuing efforts need to be made to enhance both the effectiveness and the "user-friendliness" of enforcement.

30. In some countries, competition authorities have taken steps to ensure that the benefits of deregulation for competition are not reduced by exclusionary tactics by incumbent firms. Thus, the benefits of deregulation in some sectors in OECD countries (such as public utilities, airlines and long-distance coaches) have been reduced because incumbents have cross-subsidized from non-competitive sectors or exploited vertical linkages; controlled airport time slots, computer reservations systems or bus stations; benefited from established reputations, brand names, size or financial strength; or subsequently merged. 82/ In the United Kingdom, for instance, despite privatization and deregulation in the express coach market, one of the two original public sector companies was able to retain its dominant position because of such advantages; but action was eventually taken to break it up into regional companies. However, in **some** other countries, no action has been taken by the authorities to safeguard benefits arising from deregulation. In the Philippines, for instance, deregulation of the domestic shipping industry led within three years to the entry of new operators, improvements in capacity, service frequency and service standards, and the introduction of new shipping technology. 83/ But a merger of three large shipping companies, which led to the creation of a firm with 50 per cent of the local market for seagoing freight and 65-75 per cent of the market for seagoing passengers, was cleared by the Securities and Exchange Commission without any examination of possible dangers to competition. In the United States, the Justice Department opposed some mergers in the airline industry following deregulation; however, these mergers were approved by the Department of Transport, after which prices increased and service quality deteriorated on some routes. 84/

31. In some instances, enforcement action by a competition authority has had beneficial effects in other countries and on international trade. Cases brought by the European Commission against cartels or abuses of dominance in the shipping sector have led to reduced freight charges and better service on the trans-Atlantic and Europe-Asia shipping routes. 85/ However, the beneficial effects have not been so strong on the Europe-West Africa route. Despite greater concentration, there has been a substantial reduction in charges on the maritime segment of the route (by almost half for Côte d'Ivoire and Senegal), although not to the level of charges on the other routes, because of economies of scale. The liberalization by those two countries of their regulatory entry barriers also contributed to these price reductions, and smaller reductions were achieved by other West African countries which did not liberalize. But poor equipment in ports, poor land communications with the hinterland and monopolies over cargo handling have led to variable quality of service and have not substantially decreased the overall cost of transport between Africa and Europe. This would suggest that competition policy measures by West African countries would further improve the situation, but that competition policy cannot solve all development problems.

32. A key factor contributing to the effectiveness of competition laws and policies has been the possession of enough information by competition authorities. Conversely, lack of reliable or disaggregated economic or product data, together with lack of information about production costs,

profits, market shares and consumer behaviour, has been a problem particularly in developing countries and countries in transition, and has affected the quality of decisions taken or their acceptability to the courts. 86/ It has been suggested that there is a need for systematic monitoring of industrial conditions and the structure, conduct and performance of particular industries by competition authorities, in collaboration with other governmental authorities and with competition authorities overseas. 87/ The extent to which this is feasible might be explored, taking into account resource requirements, the fact that competition authorities operate on an episodic basis to deal with specific competition problems arising in individual markets where appropriate, and the need to maintain confidentiality of sensitive business information. Lack of information has been a problem particularly in relation to evidence-gathering where collusion is suspected, 88/ and for this purpose, adequate investigatory powers for the competition authority have proved essential, problems with the inadequate powers of the competition authority to collect data legally required before a case can be filed having been experienced in India, for example.

33. Problems of information-gathering relating to RBPs originating overseas have been experienced by some countries. For example, a case brought by the United States Justice Department against an American company, a Swiss affiliate of a South African company and two foreign nationals, alleging a conspiracy to raise the price of industrial diamonds in the United States market, was dismissed because much of the evidence was overseas. 89/ On the other hand, in two other cases in the United States, where international cartels for lysine (an animal feed) and citric acid were successfully prosecuted, the Justice Department discovered evidence of price-fixing and market allocation relevant to other countries, but because of legal constraints, it could not share it with countries which were not parties to anti-trust cooperation agreements with the United States. 90/ It may be noted that there is some evidence that international cartels affect or have affected developing country markets in such sectors as heavy electrical equipment, aluminium, flat rolled steel products, shipping, electrolytic tinplate and cement. There have also been tying restraints linking the supply of semiconductor chips to the purchase of microprocessors. 91/ In a world of globalization and liberalization, the incidence and scope of RBPs having effects in more than one country should continue to increase, strengthening the need for international cooperation in this area.

B. Competition advocacy

34. A key function of competition authorities in many countries has been advocacy of the application of competition principles in the design or implementation of governmental policies and measures, including the elimination of unnecessary regulation and the adoption of the least anti-competitive means of achieving various policy objectives. For this purpose, several competition laws give competition authorities the right to intervene in legislative or administrative processes, while others may intervene only if requested. In Canada and the United States, for example, competition authorities participate in proceedings before regulatory agencies relating to competition policy, and also undertake general advocacy efforts within the Government. In the United States, the Justice Department also participates in executive branch deliberations, and has played an important

role in deregulation. In Hungary, the competition authority may take part in the deliberations of the legislature and give advice on competition issues, as well as presenting annual reports to the legislature; also, it has consultative rights with the executive when issues within its sphere of responsibility are discussed. In the Republic of Korea, the competition law requires other governmental authorities to consult with the competition authority when they wish to introduce, amend or enact any legislation that might restrain competition. Active competition advocacy efforts have been undertaken by the Fair Trade Commission with respect to both proposed and existing legislation, including advocacy of the elimination of entry barriers and the introduction of foreign competition in oligopolistic markets. 92/ Under the Côte d'Ivoire competition law, the executive may request opinions from the Competition Commission on questions relating to competition, and must make such a request where draft legislation would limit competition; the authority may itself take the initiative. In 1996, for example, a request for an opinion on draft legislation liberalizing petrol prices was made, and the competition authority gave a favourable opinion. In many cases, however, the authority is not consulted when it should be, or the appropriate procedures are not followed. 93/

35. One important area in which competition authorities sometimes have a role to play is the area of trade policies and measures. In many OECD countries, competition authorities are consulted in the formulation of trade policies; in Canada and the United States, they may also be consulted regarding the implementation of trade policies and the enforcement of trade laws. 94/ In practice, however, it is often difficult for competition authorities to achieve results in this area. It is alleged, for example, that the United States Federal Trade Commission's public comments on the economic harm caused by anti-dumping measures implemented by the International Trade Commission have frequently been ignored 95/ **and that the frequency with which the Federal Trade Commission or the Justice Department undertake such advocacy has now declined**. 96/ The OECD Council has recommended that policy makers should, when considering a prospective trade measure or reviewing existing measures, undertake as systematic and comprehensive an evaluation as possible of the likely effects of the measure or measures, including the impact of the measure or measures on the structure and functioning of the relevant markets and the long-term effects on the structural adaptation of the affected sector; and to provide a framework for such an analysis, it has prepared a checklist of the important effects of trade measures. 97/ It has been suggested that competition policy authorities can make an important contribution to such analyses, particularly with respect to the evaluation of the likely impact of the measure or measures on the structure and functioning of the relevant markets. 98/ There is little information, however, as to how such recommendations have actually been implemented.

36. In the Russian Federation, the Antimonopoly Committee has successfully argued for the suspension of proposed trade safeguard measures against imports of textiles and cash registers from the European Union. Its investigations discovered that, in some cases, domestic producers intended to obtain tariff protection without attempting to increase their ability to compete on world markets, while in other cases it proved that the main reason for deterioration in their performance was conditions on the domestic market. 99/ The Committee also cooperated with the Ministry of Economy in determining the conditions for

access of foreign investors to the Russian market, and successfully argued for the exclusion of a number of provisions which would have constituted unreasonable access barriers. In Poland, a proposed measure to impose tariffs on imported food was abandoned because of adverse reactions by the Antimonopoly Office. 100/ But one key obstacle to greater success in advocacy in the trade area has been trade restrictions in other countries. The Polish Antimonopoly Office had requested a comprehensive evaluation of the consequences of abandoning liberal trade policy and an explanation of the reasons for the adoption of protectionist measures; it argued that, if adopted, such measures should have a limited scope and duration of protection and an annual rate of reduction specified in advance. 101/ However, because of the asymmetry of response by its trading partners to its earlier extensive trade liberalization, Poland introduced a higher tariff structure; and this invariably led to price increases in markets where there was dominance. 102/

Notes

1/ See paragraph 8 of the resolution adopted by the Conference, contained in the Report of the Third United Nations Conference to Review All Aspects of the Set of Multilaterally Agreed Equitable Principles and Rules for the Control of Restrictive Business Practices (TD/RBP/CONF.4/15), annex I.

2/ See section III of the UNCTAD report "Work programme, including technical assistance, advisory and training programmes on competition law and policy" (TD/B/COM.2/EM/3).

3/ In paragraph 2 (c) of its agreed recommendations (see UNCTAD document TD/B/COM.2/EM/5, annex I). Comments were received from the Government of the Netherlands, which also sent some reference material.

4/ See paragraph 8 (a) of the agreed conclusions adopted by the Commission, contained in Annex I of the "Report of the Commission on Investment, Technology and Related Financial Issues on its first session" (TD/B/44/4, TD/B/COM.2/4).

5/ **"Empirical evidence of the benefits from applying competition law and policy principles to economic development in order to attain greater efficiency in international trade and development" (TD/B/COM.2/EM/10).**

6/ **See "Report of the Expert Meeting on Competition Law and Policy" (TD/B/COM.2/9, TD/B/COM.2/EM/12), annex I.**

7/ **Written comments were received from the Governments of Mexico, Pakistan, Poland, the United Kingdom and the United States.**

8/ The extent to which a firm's overall costs approach their theoretical minimum level, given its level of output and resources. Conversely, X-inefficiency reflects the excess of actual over minimum possible costs of a firm at a given level of output.

9/ For competition policy purposes, relevant product and geographical markets are identified by assessing either or both interchangeability of use (reasonable possibilities for consumers to switch to other producers or substitute products, and for other producers to supply the same or substitute products) and the cross-elasticity of demand (customers' willingness to switch to substitute products as a result of a hypothetical price increase).

10/ See N. van Hulst, De baten van het marktwerkingsbeleid (mimeo), covering real-estate brokerage, notaries, pharmacists, energy suppliers, shops (opening hours), credit institutions for small firms, bus transport and public procurement without tendering; and Hendrik P. van Dalen, Efficiency and collusion in Dutch real-estate brokerage, Ministerie van Economische Zaken, The Hague, June 1995.

11/ See Luke M. Froeb et al., What is the effect of bid-rigging on prices?, United States Justice Department, EAG Discussion Paper 93-2, 28 January 1993.

12/ See the data and studies cited in F.M. Scherer and David Ross, Industrial market structure and economic performance, 3rd ed., Houghton Mifflin Company, Boston, 1990, pp. 668-669.

13/ **See "The price effects of bidding conspiracies: evidence from real estate auction 'knockouts'", The Antitrust Bulletin, Vol. XLII, No. 2/Summer 1997, p. 503.**

14/ Ibid., pp. 335-336.

15/ See David B. Audretsch, "Legalized cartels in West Germany", Antitrust Bulletin (1989), vol. XXXIV, p. 579.

16/ See S. Nickell, "Competition and corporate performance", Journal of Political Economy (1996), vol. 104, no. 4.

17/ See Scherer and Ross, op. cit., pp. 411-447 and pp. 668-669.

18/ See Gregory J. Werden, A review of the empirical and experimental evidence on the relationship between market structure and performance, United States Department of Justice, EAG Discussion Paper 91-3.

19/ Strictly speaking, it is minimum economic scale of plant and operations in general which leads to efficiency gains, rather than market concentration or large firm size. However, these would tend to be related.

20/ See J.M. Macdonald, "Does import competition force efficient production?", Review of Economics and Statistics (1994), vol. 76, pp. 721-727, and Scherer and Ross, op. cit., pp. 438-439 and 670-672.

21/ See Richard E. Caves et al., Industrial efficiency in six nations, Cambridge, Mass., MIT Press, 1992.

22/ See UNCTAD, Concentration of market power through mergers, take-overs, joint ventures and other acquisitions of control, and its effects on international markets, in particular the markets of developing countries (TD/B/RBP/80/Rev.2) and studies cited therein. See also Scherer and Ross, op. cit., and D. Mueller, "Lessons from the United States's antitrust history", International Journal of Industrial Organization 14 (1996), 415.

23/ See Peter A.G. van Bergeijk and Robert C.G. Haffner, Privatization, deregulation and the macroeconomy: Measurement, modelling and policy, Edward Elgar, Cheltenham, UK, 1996.

24/ See J. Martins et. al., "Mark-up pricing, market structure and the business cycle", OECD Economic Studies No. 27, 1996/II, p. 71.

25/ Ibid.

26/ See Simon Hall et al., "How do UK companies set prices?", Bank of England Quarterly Bulletin, May 1996, pp. 180-192.

27/ See Bergeijk and Haffner, op. cit.

28/ See Scherer and Ross, op. cit, pp. 673-675.

29/ See Clive S. Gray, "Competition policy in developing countries pursuing structural adjustment", Antitrust Bulletin (1993), vol. XXXVIII, pp. 425-467.

30/ See Giovanni Nicola De Vito, Market distortions and competition: The particular case of Malaysia, UNCTAD Discussion Paper No. 105, October 1995.

31/ See Rugayah Mohamed, "Market structure, conduct and performance of Malaysia's manufacturing sector", Asian Economies, vol. 25, no. 3, September 1996, pp. 24-42.

32/ Including Brazil, Greece, Kenya, Malaysia, Mexico, Philippines, Republic of Korea and Taiwan Province of China. Similar data available for Chile, Colombia and Côte d'Ivoire; see Gray, op. cit.

33/ See Kyu Uck Lee, Competition policy, deregulation and economic development - the Korean experience, Korean Institute for Industrial Economics and Trade, 1998.

34/ See United States Federal Trade Commission, "Anticipating the 21st century: Competition policy in the new high-tech global marketplace", vol. I, Antitrust and Trade Regulation Report, Special Supplement, 6 June 1996.

35/ See OECD, Regulatory reform, privatization and competition policy, Paris, 1992.

36/ See J. Bound et al., "Who does research and development and who patents?", in Zvi Grilisches (ed.), Research and development, patents and productivity, National Bureau of Economic Research Conference Report, Chicago, 1984. See also Zoltan J. Acs and David B. Audretsch, The determinants of innovation in large and small firms, Discussion Paper IIM/IP 86-1, and Accounting for the differences between large- and small-firm innovation, IIM/IP 86-19, Wissenschaftszentrum für Sozialforschung, Berlin, 1986.

37/ See Martins et al., op. cit.

38/ See Scherer and Ross, op. cit., pp. 653-660.

39/ **See G. Symeonidis, "Innovation, firm size and market structure: Schumpeterian hypotheses and some new themes", OECD Economic Studies, No. 27, 1996/II, p. 35.**

40/ See J. Groenwegen and P.R. Beije, "The European answer to the dilemmas of competition, cooperation and mergers", Journal of Economic Issues (1992), vol. XXVI, pp. 493-511.

41/ See F.M. Scherer, "Schumpeter and plausible capitalism", Journal of Economic Literature (1992), vol. XXX, pp. 1,416-1,433.

42/ These remarks apply mutatis mutandis to IPRs ensuring product identification such as trade marks, which involve an investment in building up product recognition and goodwill.

43/ See J. Gali, "Monopolistic competition, endogenous mark-ups, and growth", European Economic Review (1994), vol. 38, pp. 748-756.

44/ See Scherer and Ross, op. cit., pp. 663-667.

45/ See P.A.C. van Bergeijk et al., "Measuring the speed of the invisible hand: The macroeconomic costs of price rigidity", Kyklos (1993), vol. 46, pp. 529-544.

46/ See OECD, Regulatory reform ..., and Dirk Pilat, Competition, productivity and efficiency, OECD Economic Studies, No. 27, 1996/II, and Competition, wages and productivity, OECD document ECO/CPE/WP1(96)1.

47/ See Clifford Winston, "Economic deregulation: Days of reckoning for microeconomists", Journal of Economic Literature (1993), vol. XXXI, pp. 1,263-1,289. The industries were airlines, railroads, trucking, telecommunications, cable television, brokerage and natural gas. A counterfactual comparison was undertaken of the effects on welfare of deregulation and of what would have happened if regulation had continued.

48/ See Kees Koedijk and Jeroen Kremers, "Market opening, regulation and growth in Europe", Economic Policy, vol. 23, pp. 443-468.

49/ See Commission of the European Communities, The impact and effectiveness of the single market, COM(96) 520 Final, Brussels, 30 October 1996.

50/ See Industry Commission to the Council of Australian Governments, The growth and revenue implications of Hilmer and related reforms, March 1995.

51/ **Information provided by the Polish Government.**

52/ See Sveinbjörn Blöndal and Dirk Pilat, "The economic effects of regulatory reforms", OECD Economic Studies, 1997. The industries considered were electricity, telecommunications, road transport, airlines and distribution.

53/ See J. Luis Guasch and Robert W. Hahn, The costs and benefits of regulation: Implications for developing countries, Policy Research Working Paper 1773, World Bank, June 1997. The estimates relating to Argentina cover different types of regulations, not just economic regulations. The measure of costs varies from efficiency losses, to additional costs to consumers, tax reductions and subsidies; thus, it is not technically correct to total them.

54/ See UNCTAD, Trade and Development Report 1994, United Nations publication (Sales No. E.94.II.D.26).

55/ See UNCTAD, Corporate policies in the Republic of Korea (UNCTAD/ITP/65), Report by Kyu Uck Lee. See also Sea Jin Chang and Unghwan Choi, "Strategy, structure and performance of Korean business groups: A transaction cost approach", Journal of Industrial Economics (1988), vol. XXXVII, pp. 141-158.

56/ See Sanjaya Lall, "Industrial policy: The role of Government in promoting industrial and technological development", UNCTAD Review 1994 (UNCTAD/SGO/8).

57/ See Alice H. Amsden and Ajit Singh, "The optimal degree of competition and dynamic efficiency in Japan and Korea", European Economic Review (1994), vol. 38, pp. 941-951.

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